

PRESENTATION FRETWORK DESIGN WITH THIS NUMBER.

Hobbies

• A Weekly Journal •

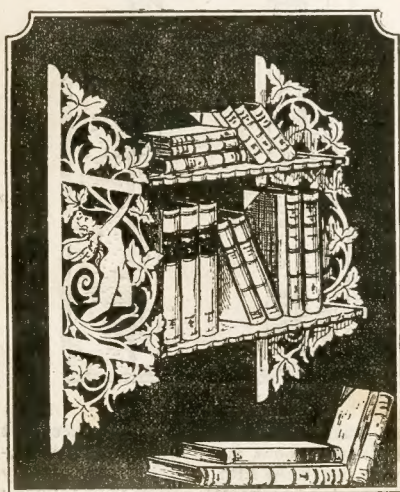
For Amateurs of Both Sexes.

No. 18. VOL. I.

FEBRUARY 15, 1896.

ONE PENNY.

"HOBBIES" DESIGN,
No. 18.



FRETWORK
HANGING BOOKSHELVES.

Stamp Collecting.
Wood Carving for Amateurs.
Lantern Slide Painting.
Playgrounds of Electrical
Science.
Stains for Fretwork.
Photographic Notes & Hints.
Prize Competitions.
Bees as a Profitable Hobby.
Cycling and Athletics.
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Correspondence, Etc.



HOW TO MAKE AN ELECTRIC BELL SET.

CHAP. II.



ADJUSTING the Bell is performed as follows:—First of all connect your battery (when you have made it) to the terminals of the Bell so that the current can flow through the circuit; then screw up the contact screw until the Bell rings, or if it does not

ring screw it the reverse way. Probably the hammer shaft may require bending, but a little experimenting will soon put the reader on the right track.

Probably the reader would like to know why an Electric Bell rings. Let us follow the current throughout the system. When the push is pressed the circuit is completed. The current then travels through the wire to the contact screw, through the armature spring, and through the magnet coils to the return wire. When an electric current flows through the magnet coils, the core becomes highly magnetised and draws the armature towards the poles. At the moment the armature is attracted the current is broken through the contact spring leaving the point of the contact screw. The current ceases to flow and the armature returns by the force exerted by the armature spring, and contact is again made. This action takes place with great rapidity as long as current is supplied.

Platinum points are used for the make and break arrangement, because there is a great deal of sparking and consequent corrosion between the contact points, and platinum is about the only metal that can stand this.

When making connections always cut away the silk or other insulating substance so that metal can touch metal.

When fitting a cover for the Bell mechanism only fit it on by hooks and eyes so that it can be easily removed when an examination of the apparatus is required.

THE BATTERY.

The best battery for Bell work is the "Leclanché." The cell is made in several

forms; the cheapest and easiest to make is shown in Fig. 6. There are usually three sizes of cells sold at electrical stores, and these give various quantities of current according to size. A table is shown below giving particulars of size, resistance, etc.

| No. | Size. | E.M.F. | Int. Res. |
|-----|---------|--------|-----------|
| 1 | 3 pints | 1·5 | ·87 |
| 2 | 1 quart | 1·5 | 1·25 |
| 3 | 1 pint | 1·5 | 8·5 |

The reader may use any of these sizes, but for ordinary Bells No. 2 will prove the best.

For the benefit of those who are interested in chemical science we will describe the chemical action that takes place during the working of

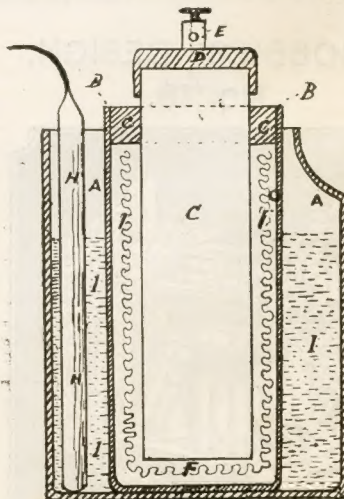


FIG. 6.

the cell; but the non-chemical reader need not trouble himself about it, as we fear the knowledge will not help him to make the battery any better. The chemical action is as follows: The zinc, sal-ammoniac, and per-oxide of manganese are changed into zinc chloride, water, and ammonia; and the oxide of manganese is reduced to an oxide less rich in

oxygen. Chemical signs Zn , $2NH_4Cl$, and $2MnO_2$ become $ZnCl_2$, $H_2O + 2NH_3$, and Mn_2O_3 . Should a good strong current of short duration at long intervals be required, this cell will answer the purpose well; but for a continuous current it is useless, as it polarises very quickly, although on the other hand it quickly recovers itself. It also has the advantage that no action takes place unless the cell is doing work, and it can stand charged for months without deterioration. This advantage makes it of the greatest use for Bell work. The cell does not give off any objectionable smell, and can therefore be placed anywhere without giving offence even to the most sensitive nose.

The following are the principal articles required:—

A glass cell; this is usually of a square form, furnished with a lip to hold the zinc element.

A porous pot; this is an unglazed earthenware jar as tall as the outer glass jar, and rather smaller than the mouth.

A carbon plate, $1\frac{1}{2}$ inches longer than the porous pot, and $\frac{1}{2}$ inch less than the internal diameter. This plate should be furnished with a brass terminal.

A rod of zinc about $\frac{5}{8}$ inch thick and 1 inch longer than the glass cell.

A small quantity of coke and per-oxide of manganese. This should be carefully broken up into pieces about the size of grains of rice, and sifted from all dust, otherwise this dust would clog the pores of the porous cell and soon stop all action of the battery.

We can now proceed with the construction of our battery.

First take the porous pot and stand the carbon plate upright in it, terminal end upwards, then pack round the sides with equal parts of the broken coke and manganese mixed, as tightly as possible to within $\frac{1}{2}$ inch of the top. Two small pieces of glass tube should be embedded so that the tops are level with top of the cell; this is to allow the gas formed in the working of the cell to escape. The top of the cell should be filled up with melted pitch. The projecting end of the carbon and the top of the cell should also have a coat of melted pitch. Work it well into the surface and down the sides to the extent of 1 inch; do not touch the terminal with the pitch. Also dip the bottom of the cell into melted paraffin wax to the depth of $\frac{1}{2}$ inch. The mouth of the glass cell should also be dipped into the melted paraffin wax to the extent of 1 inch. The reason why the tops of the cells are coated with paraffin wax (Brunswick black or melted pitch does quite as well) is because the salts used in the excitant have a peculiar tendency to creep up the sides of the cell and crystallize thereon; by coating the tops with any of the above materials this creeping is greatly checked. The porous cell may now be placed in the interior of the glass cell.

The zinc rod will now require amalgamating. To do this procure two glass test tubes (as used by chemists) long enough to contain the zinc rod. Take one and half fill it with water, and add a teaspoonful of sulphuric acid; then take

the other tube and a quarter fill it with the same mixture and put a little mercury at the bottom. First dip the zinc rod into the tube containing the acidulated water to clean it, and then dip it in the other tube. By holding the tube in various positions the mercury may be persuaded to deposit itself on the zinc rod. Wipe off the superfluous mercury, solder a piece of No. 20 gutta percha covered wire to the top, and stand it in the lip of the glass cell.

Now make a strong solution of sal-ammoniac and water, say about as much of the first as the water will take up, and three parts fill the space between the cells with the liquid.

Our battery is now complete, and may be laid aside to get into working condition, which will be in about four hours.

Meanwhile, the next proceeding is to make the push, but for this, and for the "connecting up," another chapter must be reserved.

(To be continued.)

Platinum Printing on Silk or other Fabrics.

This is quite a possible "hobby." Good platinum prints from photographic negatives may be made upon silk handkerchiefs, satin, or sateen. The following is the formula for

SENSITISING SOLUTION.

Solar Iron Solution, A.

| | |
|----------------|--------------------|
| Ferric Oxalate | 28.0 parts per 100 |
| Chlorine Water | 21.5 " " |
| Water | 50.5 " " |

Solar Iron Solution, B.

| | |
|----------------------------|-------------------|
| Mercuric Chloride (cryst.) | 0.6 parts per 100 |
| Water | 99.4 " " |

In use take one part of each and mix before applying to the fabric, then pour the solution into a saucer, and nearly saturate a small piece of sponge with the solution, pass it gently over the part to be sensitised, and dry slowly. When dry it can be printed. It is advisable that this should be done in sunlight and at direct angles.

Developer: Dissolve 30 grains of platinum salts in one ounce of water, and keep it as stock. To develop, take of the stock developing solutions, ordinarily used for platinotype, 100 minims, and of the stock platinum solution, 30 minims. The developer may be applied to the exposed or printed fabric with a small sponge or soft brush. The image will appear in a few seconds, and development may be continued until the print is of the required strength. This process permits of local development, as it is thoroughly under control. After development is complete nothing remains but to wash the fabric in acid and subject it to the same process in plain water.

£20

Tobaccoists Commencing. See Illd. Guide & Catalogue (258 pgs.) Ed. "How to open a Cigar Store, £20 to £3,000."—Tobaccoists' Outfitting Co. (Reg.), 186, Euston Rd., London. N.B.—Shopfitters and showcase makers for all trades. (Over 50 years reputation.) Mgr., H. Myers.



PHOTOGRAPHY

for Amateurs

NOTES OF THE WEEK.

THE season for commencing Photography is now approaching, and many readers of *Hobbies* will be thinking about buying apparatus and getting in a stock of plates, chemicals, printing paper, etc. We shall be pleased to give advice upon all these points, and shall gladly answer any questions upon Photography and photographic procedure. It is not necessary to have expensive apparatus or material which is costly and can be done without, but by all means have the best your money will buy. We shall gladly tell our readers all about their needs, and in connection with the editorial department of *Hobbies* we hope to be able to devote one afternoon a week to callers, in order that to those who may be able to come and see us we can give personal advice and assistance, and so encourage them to practice Photography and kindred Hobbies. This arrangement will, we hope, be possible at an early date; in the meantime all questions will be answered promptly.

The excitement in photographic circles is the wonderful discovery of Professor Röntgen. The subject has already been referred to in *Hobbies*. Quite recently Mr. A. A. C. Swinton, at the Camera Club, and Mr. Gifford, before the members of the Royal Photographic Society, have shown how the wonderful Photographs are obtained. In Mr. Swinton's first experiments an ordinary gelatino-bromide plate, enclosed in an ordinary dark slide, was, says the *Optician*, used. The shutter of the dark slide was kept closed, and upon it were placed miscellaneous articles, such as coins, pieces of wood, carbon, ebonite, vulcanised fibre, aluminium, etc. Above was supported a Crooke's tube, which was excited for some minutes. On development, shadows of all the articles placed on the slide were clearly visible, some being more opaque than others. Further experiments were tried with thin plates of aluminium, or of black vulcanised fibre, interposed between the objects to be photographed and the sensitive surface, this thin plate being used in place of the wood of the camera back. In this manner sharper shadow pictures were obtained. While most thick metal sheets appear to be entirely opaque to the radiations, aluminium appears to be relatively transparent. Ebonite, vulcanised fibre, carbon, wood, cardboard, leather, and slate are all very transparent, while on

the other hand glass is exceedingly opaque. Thin metal foils are moderately opaque, but not altogether so.

The writer of the article continues:—So far as these experiments go, it appears that, at any rate, without very long exposures, a sufficiently active excitation of the Crooke's tube is not obtained by direct connection to an ordinary Ruhmkorff induction coil, even of large size. So-called high frequency currents, however, appear to give good results, and all Mr. Swinton's experiments have been made with the tube excited by a current obtained from the secondary circuit of a Telsa oil coil, through the primary of which were continuously discharged twelve half-gallon Leydon jars charged by an alternating current of about 20,000 volts pressure, produced by a transformer with a spark-gap across its high pressure terminals.

The article we have been referring to is illustrated with two reproductions of Photographs taken by the system above named. One is a Photograph of a living human hand, in which the bones and all the joints are distinctly visible, and the flesh shown as an outline around them; the bones in the back of the hand are seen *through* the flesh. We understand that for this "shadowgrain" or "eathograin"—as they have been named—an exposure of 20 minutes through an aluminium sheet .0075 in thickness, the Crooke's tube, which was one of the kind, the *Optician* says, made in Germany, containing some white phosphorescent material, probably sulphide of barium, being held vertically upside down, with the lowest point two inches above the centre of the hand. The other illustration is a reproduction of the Photograph of a horn-handled razor, which was exposed while in its opaque case, and covered with a sheet of vulcanised fibre.

The whole subject is one which is simply astounding. Already the system has been proved of practical value by the medical profession. It will be possible, we understand, to examine the inside of the body, and so assist in giving relief by methods which have only been dreamt of in our philosophy. The Photographs referred to may be purchased of Messrs. Newton and Co., Fleet Street, as lantern slides, at a very moderate cost.

These "shadowgrains" are obtained, says Mr. Hugo Miller, without lens or camera. They are shadows fixed by chemical means, shadows which are invisible to the eye because cast by radiations which do not effect our organs of vision.

Sensitive films 200 feet in length are now being made and used by Mr. Birt Acres, in connection with his recently patented Kinetoscope. He is able to project on the screen scenes by the seashore, with the sea *in motion*, the waves never still and breaking on the pebble beach most realistically.

At Bradford, Mr. Percy Lund, a gentleman well known in photographic circles, has been lecturing upon the utility of Photography. He said, in the course of his remarks, that to the artist it proved of immense value; to the geologist it truthfully portrayed the different strata; to the astronomer it was a means of truthfully rendering the exact position of the stars and other heavenly bodies; to the business man it had, he said, become a necessity. Practically, no profession or trade could do without Photography; it was the willing handmaid of all.

It is possible to make a useful outline Lantern Slide by tracing a design with a piece of carbon paper on to the glass. Varnish the glass with Canada balsam, let it dry, then place over it the carbon paper, put the design on and trace over the lines with a stylus or pencil. These lines can afterwards be strengthened if desired. The mask and cover glass will keep the Slide in good condition. If preferred, fine ground glass may be used in place of varnished glass. This will be found an excellent method of preparing Slides from book illustrations for science lectures, etc.

We have more than once dwelt upon the difficulty of introducing figures in landscapes; here are some considerations which, says the "Amateur Photographer," show the great importance of the subject:—(1) Figures when properly introduced may be made to yield the suggestion of life or of movement. In the one case we have an appeal to human sympathies, in the second to human experience and intelligence. (2) By their costume, etc., they may help to fix the time, locality, or point to some special feature of interest. (3) By their action, position, etc., they may help to convey the sentiment of the scene, tell the story, explain the position. (4) They materially assist by giving scale, and so help in forming the conceptions of space, distance, and atmosphere. (5) They may be made of great use to balance a line or mass, or to accentuate or hide a point to connect different parts.

Not long since a correspondent wrote us upon film holders. Mr. G. P. Spooner, of Islington, has just put a new one upon the market. It is of the usual form, but the spring clamp is made with two spring handles and stretchers. The handles are pivotted one at each end of the frame. They are so fitted that by slightly compressing them between finger and thumb, the sides of the clamp are brought nearer together in order to attach or release it, the clamp, from the folded sides of the tray.

N.B.—If any Photographic Apparatus purchased from us does not give entire satisfaction, and is returned in good condition as received within three days, we will refund the purchase money.

PHOTOGRAPHY FOR BEGINNERS.

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21/- The YOUTH'S GUINEA COMPLETE 21/-
OUTFIT.

For Plates $4\frac{1}{2}$ by $3\frac{1}{2}$ in.

Containing our famous "Half-Guinea Camera Set," with complete Printing Apparatus, Ruby Lantern, Focussing Cloth, in well-made Box with Hinged or Sliding Lid and Leather Strap for convenience in carrying; also Folding Hardwood Tripod, and Full Instructions. Price 21s. Ditto, for plates $6\frac{1}{2}$ by $4\frac{3}{4}$, price 42s.

For full particulars of our more expensive Cameras, ranging in price from one to twelve guineas, see our new and fully illustrated catalogue of Photographic Apparatus.

Price 2d., post free.

J. H. SKINNER & Co.,

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CHAP. X.—FRET CARVING.



Fret," the second, "Fretted Carving." Both, however, must be classed under the same head.

FIGURE 28.

Fig. 28 does not represent an existing piece of work, but is given merely as an example. It might be used as an upright panel, or as the front of some drawer or box. In general character it is similar to Fig. 27 (as shewn in the previous chapter), but the outline, instead of being carved with a Chisel and Gouge, is cut out with a fretsaw. The design must be carefully traced on the wood with black carbon paper, the circles being described with compasses, and the straight lines ruled. Great attention must also be paid to the overlapping, to see that the strap pattern goes over and underneath alternately.

When the fretsaw is brought into play, it should do its work accurately. If the design were purely foliage, it might be better to keep rather outside the line, so as to allow the Carving Tools ample room to work on; but with this pattern so little of the outline is afterwards touched that it will be found easier to keep the exact line at the outset. Too soft wood should not be used for this class of work, as it might

split when the Carving was begun. Walnut could be tried with safety. The thickness depends greatly on the size of the article which is being made, and on the use for which it is required. From one-quarter to three-eighths inch may be suggested. All the Carving Tools must be as sharp as possible, so that the work may be done without having to apply too much pressure. It must be remembered that while a solid piece of wood will stand some knocking about, a fret-cut article runs a strong chance of being broken if it is violently handled.

With this pattern the Carving work must be done methodically, or the outcome will be a failure. The various leaves should first be outlined, and the wood on which they lie gently cut away, in order to place them in relief. This done, the strap-work should be pared down at the parts where another piece crosses over. No

finishing should be attempted till all is roughly put into shape, and any leaf modelling must be left till the end. In the strap-work, as there is a good deal of intersection,

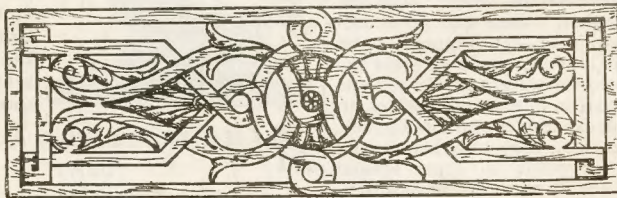


FIG. 28.

the overlap dips should not be more than one-sixteenth of an inch—if anything, they should be less. A stronger relief would make the surface very uneven, and would give much difficulty in the task of smoothing down. The dips should be reached by a gradual cut; there must be no abrupt angles at each side, but the intersection bands should give the impression of being slightly bent, as they naturally would be in a case of actual overlapping. The point to guard against is in making the strap-work appear as if it were warped; but, at the same time, the possibilities of erring in the opposite extreme must not be overlooked. The leaves must be rounded only to the extent of making them look like what they are meant to be, and no more. The style of ornament does not permit of their being highly carved. In tooling

them, the object to be held in view is to make them *clothe* the strap bands from which they spring. They must not look as if merely stuck on, but must have the appearance of growing out from the main ornament, and quietly curling round it.

Fretworkers, who know how to carve, can improve many of their articles by a judicious use of the Gouge here and there. The flatness of intersecting lines might be taken away, as shewn in Fig. 28, obscure parts could be made clear, stems could be trimmed, and leaves veined and gently undulated. It must be understood, however, that—to use the familiar expression—the line must be drawn somewhere. There is no use in going too far, and in making the fret a regular piece of Carving. If the article is intended as fretwork, that intention should be preserved. The deadness of the surface may be removed, there can be touching up, hollowing, incising, trimming, dressing, but no modelling.

FIGURE 29.

With Fig. 28 the general idea of the design was that of a Fret, improved by Carving; the idea of Fig. 29 is that of a piece of Carving, the form of which is secured by fretwork. The leading method in the previous case was



FIG. 29.

fretting; here it is carving. Half-inch wood will be required, as there are two surfaces to be considered—the foliage and the cross; and thinner material would cause the cross to be cut down to a mere wafer. The fretwork should first be performed. Some Carvers would prefer to tackle the foliage beforehand, as when the outline is sawn, there is a difficulty in securing the work to the Bench. This objection can be met by leaving a piece of surplus wood at the end of each arm, and sawing it off afterwards. If the fretsaw is not kept precisely to the line, it should wander rather to the outside than to the inside. Indeed, to prevent the stems from appearing too delicate, it is recommended to make the allowance of exactly one hair-breadth; the amateur's eye will no doubt enable him to judge of this distance to a nicety.

When the carving is commenced, the first work is to cut down all over till the level of the cross is reached. The cross is flat, but has a sunk punched channel. This channel not only adds to the effect of the cross itself, but also helps to throw the leaves into bolder relief. The treatment and modelling of the foliage need not be discussed here in detail, as the illustration is too small to indicate the proper form. Care should be taken to give leaves and stems a feeling as of clinging to the background. The middle course to steer is to preserve against the appearance of applied overlay, and at the same time to remove any suggestion that the cruciform ground and the foliage are one, and that the latter grows out of the former. It would be found necessary to trim the back slightly, as the stems will originally be the whole thickness of the cross.

A great many patterns of this class of work are procurable, and any amateur who has a knowledge of fretwork (as he should have) will experience no difficulty in Carving beyond that which has to be met with in ordinary work.

(To be continued.)

'Hobbies' Designs.

HAVING to the very heavy expense involved in the production of the Designs forming our Weekly Presentation Supplements, we cannot supply these with back numbers of *Hobbies*. Copies of them may, however, be obtained on sending *threepence* for each Design required to the Publisher of *Hobbies*, Bouverie House, Salisbury Square, London, E.C.

For the convenience of our readers we give below a complete list of the Designs already published.

1. Midget Photo Frame, with Overlay Ornament.
2. "Aphrodite" Mirror Bracket.
3. Bent Iron Work Gong Stand.
4. Hanging Twine Box, with Overlay Ornament.
5. "Card" Inkstand.
6. Carved Adams Frame.
7. "Gasalier" Bracket.
8. Bent Iron Work Table Stand, for Cards, etc.
9. Carved Lamp Bracket.
10. Model of a Victoria.
11. "Toilet Glass" Cabinet Photo Frame.
12. "Swing-Boat" Match Holder.
13. Hanging Fretwork Calendar.
14. Bent Iron Work Grill Panel.
15. Carved Blotting Book Cover.
16. Prize Card Receiver.
17. Panel with Overlaid Ornaments.
18. Bookshelves.

The following Designs are in preparation —

19. Two Stencil Dado Bands.
20. Fretwork Gong Stand.



COLOURING LANTERN SLIDES—Continued.

ALREADY we have mentioned the advantage of toning Slides. By far the most popular tint is a Warm Brown. With such Slides or, more correctly, transparencies, it is not desirable that the whole surface should be coloured. Some judgment is needed to suit the tint or tone to the subject. The harsh black and white contrasts of some fifteen years ago are, happily, rarely met with. The tone of the Slide will regulate the after colours to be used, just as the first wash in watercolour is applied in order to accord with the scene depicted.

It is well to keep down the tone in order that when the colour is applied it shall increase the density of the Slide as little as possible. The Slide, during the process of colouring, may be examined by the aid of the Lantern. This can be done by placing a cardboard mask on the Slide, taking care, of course, not to touch the colouring, and then placing upon that a perfectly clean cover-glass. For temporarily binding these, either four India rubber bands may be used, or the metal binders which are sold by most photographic dealers.

The greatest care must be taken to keep the Slide free from dust. Microscopic dust on a Lantern Slide will have the appearance of grains of sand when the picture is projected on to the screen. Hairs from the brushes, however small, if left in the paint and transferred to the Slide will form a serious blurr. The removal of these is a difficult matter. A darning needle may be used, but even then the painted surface will have the appearance of being etched, and the attempt to fill in the scratches will, in all probability, be a signal failure, so that every precaution possible must be taken to prevent these annoying trifles to exist. If possible, the painting should be done in a room as bare of furniture as possible, with no carpet, and before starting to work every possible place or thing upon which dust has been deposited must be carefully wiped with a damp cloth, not a "fluffy rag." The worker should have a long linen apron, or, better still, a blue jean blouse such as are worn by workmen in Paris. These are all very necessary precautions, and, as attention to

trifles often is a forerunner to success, we heartily commend this to our readers.

The table, which may well be a small deal kitchen one, should be placed near the window, facing north if it be possible, and may be covered with American cloth, newspaper, or other material that is not "fluffy" or likely to make dust. Upon this, in the centre, the easel, as already described, should be set up. On the left hand the colours may be arranged, and on the right the palette with brushes, and tissue paper to wipe them in. A small cup or tin of turpentine will be needed for cleaning the brushes.

The transparency, we will assume, has been placed upon the easel, which is arranged at the proper angle with the top light screened off. We will commence operations with the sky, the picture being a landscape view. We have already advised for the sky Prussian Blue, and proceed to squeeze out of the tube a quantity that would be of about the same size as a small pea or grain of rice. A little McGilp and turpentine will be required to mix the paint upon the palette. Having decided as to the depth of the tint, proceed to colour in the sky boldly, putting on the paint evenly, working the brush always one way—from side to side. It will not be possible to avoid some markings and ridges; these must be removed by a subsequent process. Let the picture rest for a few minutes in order that any excess of turpentine may evaporate. We have left the sky, practically, all one tint, and must proceed with what is known as "dabbing." The dabber may be made of washleather, very soft, packed with cotton wool, and tied together to form a pad. This form is open to objection, because very fine hairs are likely to separate from the leather and cause markings upon the paint. Mr. Hepworth says the best dabber which it is possible to get is the finger. This, he says, needs a certain amount of preparation. The flesh of the finger is covered with a number of little ridges, which make what are called finger marks. These ridges can be obliterated by rubbing the finger with pumice-stone and water, or by using pumice-stone soap. A quicker plan is to rub the finger a few times on a very fine glass paper, and the ridges will quickly disappear.

The dabbing is best commenced at the left-hand corner, and with the finger we dab rapidly from side to side. The marks are rather alarming at first, but gradually the turpentine will evaporate and the marks tone into one another, making a perfect tint. This work will require patience and practice, but we are told that genius is only "the gift of perseverance," so that success is within the reach of all.

Having now obtained a blue tint for our sky, and wishing to indicate clouds, we meet with much difficulty. The printing in of clouds on a Lantern Slide is not an easy matter, and although most of the clouds in coloured Lantern Slides are of the "cotton wool" order, we hope our readers will try and do something better. To do this, the form of clouds must be studied. It would be well to make rough sketches of such types of clouds as:—cirrus, cumulus, storm scud, stratus, nimbus, &c. Having formed some idea of these, it is well to be sure that they are in accord with the lighting of the landscape, &c. This subject will be specially dealt with in *Hobbies* later on in the articles on "Photography." To introduce cloud forms into the sky, take a piece of clean kid, part of a glove, and bind it several times on to a piece of pointed cane, or a pencil will answer the same purpose, with the rough or inner side of the glove for the rubbing surface. With this rub the tint so as to form the outline of the cloud desired. This will have to be done with great care, but with boldness, in order to give vigour to the cloud form.

Having the blue tint it will be well to fill in such other parts of the landscape with it as may be desirable: water in the foreground and distant hills should be filled in with the blue tint. For the latter the tint may be darkened to a purple with crimson lake—shadows may also be washed in with this darker tint. The dabbing process is again resorted to, and any excess of tint upon parts not intended to be coloured may be wiped out with leather or the kid stump.

We have dealt with the most important part of the colouring, i.e., the mass of tint. Whatever colour this may be, the same treatment may be adopted. The different parts of the composition must, of course, be coloured in accordance with

the scene, figures or objects depicted. Contrast is the great thing to aim at, provided such contrasts are not extreme or harsh; here is the generally accepted rule governing contrast of colours used by painters. The three primary colours are red, blue, and yellow; any two of these mixed together form a secondary colour, which is complementary to the remaining primary colours, i.e. blue and yellow form green, which is complementary to red. Yellow and red form orange, which is complementary to blue. Red and blue form purple, which is complementary to yellow. These are simple rules which should be laid to heart when painting Lantern Slides.

We will conclude this chapter with a few suggestions as to colours to use:—For trees and foliage, greens of course are needed. These are best prepared by mixing Prussian Blue and one or other of the various yellows, such as Brown Pink, Italian Pink, and Raw Sienna. These may be given a variety of tints when assisted by other colours. Autumnal effects may best be obtained by adding Chinese Orange. In making up these tints Canada Balsam should be used as the medium, and the colour carefully mixed on the palette.

For shipping and boats on the shore it is recommended to use Vandyke Brown, Raw Sienna, Burnt Sienna, Chinese Orange, Indigo and Black. Water, as we have said before, may be treated much in the same manner, as the sky points of light may be pricked out with an etching needle after the paint is dry. To represent waves the surface must be worked up with deeper blue, yellow, indigo, &c. For the foreground no hard and fast line can be laid down. The colour must be carefully applied, and the effect may be heightened by using varnish, or a second colour may be applied.

To become a successful Lantern Slide painter, a knowledge of drawing, form, light and shade, and colour, is necessary; that is, if anything above the mediocre is to be obtained. All the rules and instructions that we can possibly give will not bring about the end desired, for it is an old adage and a true one, that:—

"Artists are born, not made."

(To be continued.)



MAGIC LANTERNS & SLIDES.

The best and cheapest house for the purchase (hire or exchange) of lanterns and slides. Walter Tyler, 48, Waterloo Road, London.

Walter Tyler's new pattern helioscopic lantern is far superior to any other lantern at the same reasonable price. The demand has been so great that new machinery has been made for their production, and helioscopes can now be delivered on receipt of order. Walter Tyler, 48, Waterloo Road, London.

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WALTER TYLER,

48 to 50, and 94, WATERLOO ROAD,
LONDON S.E.



By C. N. WHITE,

First Class Certificated Expert of the British Bee-Keepers' Association.

CHAP. II.—BEES.



BEFORE anyone can expect to become expert in the management of the Apiary he must learn something of the busy insects that, while they bring pleasure to those who partake of the sweets they store, inflict at times pain of an acute form upon the manipulator. It is impos-

sible to keep bees, and make bee-keeping a paying hobby, without being stung, just as it is equally impossible to find everything of a pleasant nature in other work we may be engaged in; but, by a study of the bees, their wants and requirements, and above all the disturbing influences to which they are subject, we shall be led to take a keener and more intense interest in the apiary, and learn to avoid much of the unpleasantness that results from an unwelcome introduction to what Josh Billings very aptly terms the "business end of the bee." Learning first about the bees, we shall find that in every colony, whether it be located in a hollow tree, skep, box or hive of the most improved pattern, there are to be found at certain seasons of the year three kinds of bees, the *Queen*, *Drones* and *Workers*, the latter two kinds in numbers varying according to the amount of control the bee-keeper exercises over their production.

The *Queen* naturally first claims attention, for she is the mother of all the bees in the hive, and for that reason should compel our close attention. Her sole duty is to lay eggs, which she does from early in the year until the autumn, more or less according to circumstances, and it is upon the manner in which the bee-keeper controls the queens in egg-laying that he succeeds or fails in making bee-keeping a profitable hobby. Early in the year, when the bees are few in number compared with what the hive will contain later on, and the weather cold, few eggs are laid, and they are deposited

in the centre of the middle combs in the warmest part of the hive. As the year advances and the weather becomes warmer, the number of eggs laid daily gradually increases until in the height of the season a really prolific queen will for some time be depositing between 2,000 and 3,000 eggs per day. In the early part of the year the eggs laid by the queen are deposited in the small horizontal cells of the comb, and produce in twenty-one days workers or neuters. Later on, when the hive is becoming fairly populous, eggs similar to those previously laid, but unfertilized, are deposited in the larger horizontal cells generally found on the lower parts of the comb, and from these issue in twenty-five days drones or male bees. The presence of drones is usually taken as a sign that swarming time is near, and it is then, if not before, that the bee-keeper must use his wits if he is to prevent the issue of swarms and keep the bees hard at work in supers. There are still other cells, differing altogether from the worker and drone cells, which are built upon each side of a mid-rib of wax and constitute the comb, but they are only found at swarming time. In shape they are much like acorns, and are built on the bottom edges of the combs where there is likely to be room for such bulky cells, or on the face of the combs, when they must hang down between them. These cells the bees build when the presence of thousands of workers and drones and the daily increase render a division of the colony necessary; the queen then deposits in them eggs similar to those laid in the small worker cells, but inasmuch as the grub, which issues from the egg three days after it is deposited in the cell, has room for full development, and is, at the same time fed with a food richer in nitrogen—the pollen element—there is produced instead of a worker in twenty-one days a perfect queen in sixteen days.

The work performed by the queen is of such a nature that she is unable to perform it satisfactorily and at the same time look after her own requirements; in fact, if she, like the other bees, were compelled to take and digest her food, she would be incapable of doing the immense amount of egg-laying with which she is credited.



QUEEN BEE.

If we were to take out of a hive, very carefully, the comb on which the queen was busy depositing eggs, we should see that around her were many worker bees apparently showing deference to "Her Majesty." The object of their close attention is, however, one of great importance; they are there ready to supply the queen, as they do the grubs, with food that has undergone the necessary digestive processes in their bodies.

The queen leaves the hive a few days after issuing from the cell in order that she may meet the drone; then, if successful in her wedding trip, she never again leaves the hive unless she leaves with a swarm. Her length of life depends upon the work—egg-laying—which she performs. As she is only capable of laying a limited number of fertilized eggs, the usefulness of a queen will be determined by the nearness to exhaustion, in this respect, she comes. It has been found that, although queens may live three or four years, or even longer, they are in their prime during their first two seasons, and, therefore, to ensure the first condition of success, every bee-keeper should make it a rule to allow no stock to be headed by a queen after her second season.



DRONE.

The Drones as stated above appear when the warm days of spring appear, for then the brood nest has been expanded and the population much increased. As far as it is at present known, the drones, except for the one purpose for which they exist, are to the practical bee-keeper a useless part of the vast crowd, and, looking upon them as such, he limits their production as much as possible, so that there may be a larger proportion of workers and less consumers.

The length of life of a drone depends upon the indulgence of the workers, who, at the end of the season, or earlier if stress of weather causes a scarcity of food, turn them out of the hive to die; and quick work they make of it, for in a short time hundreds of drones will be found lying dead in the front of the floorboard at the close of the day on which the workers have decided to commence the slaughter. At the most, therefore, drones only live a few months, unless by any means a stock loses its queen, then the drones are allowed to linger on and die a natural death.

Workers. These little bees, which are really immature females, are sometimes known as neuters, but inasmuch as they know of nothing but work, the name usually applied to them is more appropriate. Workers, in performing the duties that fall to their lot, act in various capacities: first they are nurse bees, and for the first fortnight of their existence they prepare food from honey and pollen and give it to the queen and the grubs. They then leave this work to the next younger lot of bees, and take to the more arduous work of gathering honey and pollen. They have also another work of a very important nature to perform; they build the combs of wax, a fatty secretion resulting from the consumption of honey or other carbonaceous



WORKER.

food, such as syrup. The wax oozes out from beneath the abdominal rings in thin white flakes, and so delicate is it that when the combs are completed the cell wall are only $\frac{1}{100}$ inch in thickness. This busy worker cannot long stand the strain of the heavy work falling upon it, and therefore its life is of short duration. The average length of life of a worker bee is forty-six days. Those that come into existence in the busiest part of the year have naturally the shortest term of life, while those that issue from the cells at the end of the season, having very little work to do, live through the winter, and issue from their winter rest strong and vigorous, as they should be, to enter upon their spring-work.

(To be continued.)

"HOBBIES" Lantern Slide Exchange.

Mr. James Boyle, jun., 283, Preston New Road, Blackburn, who has kindly undertaken the duties of Honorary Secretary of the newly-formed *Hobbies* Lantern Slide Exchange, informs us that the following Sets of Slides are now at the disposal of the members:—

| Set. | Title. | No. of Slides. | Remarks. |
|------|--------------------------|----------------|----------------------------|
| 1 | JAPAN AND THE JAPANESE | 50 | Coloured |
| 2 | LIFEBOAT | 7 | Coloured |
| 3 | MISTLETOE BOUGH | 10 | Coloured |
| 4 | HER BENNY | 50 | Plain |
| 5 | A PEEP BEHIND THE SCENES | 50 | Plain |
| 6 | JAPANESE WAR | 30 | Coloured by native artists |
| 7 | EGYPT AND THE NILE | 20 | Coloured |
| 8 | ARCTIC REGIONS | 20 | Coloured |
| 9 | COMIC | 40 | Coloured and Mechanical |
| 10 | EFFECTS | 24 | Coloured |
| 11 | GABRIEL GRUB | 24 | Coloured |
| 12 | COTTON MACHINERY | 50 | Plain |
| 13 | BY SEA TO INDIA | 6 | Long panorama, coloured |
| 14 | MOTHER'S LAST WORDS | 20 | Coloured |

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NORFOLK NURSERIES,
DEREHAM.

Our January Photographic Competition.

THE PRIZE AWARDS.

WE are pleased to report an improvement both in quality of work sent in and the number of competitors. The awards are as follows:—

First Prize—(TEN SHILLINGS) to R. W. COPEMAN, Henstridge, Blandford, for "Salisbury Cathedral from the River."

Second Prize—(FIVE SHILLINGS) to W. SHIRLEY, Cotham, Bristol, for "Dorothy's Steps, Haddon Hall."

Hon. Mention—W. R. BRIGHTMAN, "A Stormy Sunset;" and **W. KEOGH**, "Glendalough, County Wicklow."

We reproduce the First Prize Photograph, and our readers can themselves form an opinion of the admirable composition and the careful study

sheep; the light breaking through the storm-clouds plays upon their fleecy backs, reminding us much of the excellent pictures by Col. Gale, which for so many years have gladdened the hearts of visitors to the Royal Photographic Society's Exhibition.

From Mr. W. Keogh we have received a most charming quarter-plate Photograph of Irish Lake Scenery, a picture which might pass for a Norwegian scene. Mr. Keogh will, ere long, take front rank in Photographic work.

In the First Class we are able to place thirteen competitors. The calls upon our space do not permit of any detailed criticism, but amongst the best are:—"Aldwarbe Locke" (A. S. Pye); "A Summer Afternoon" (F. H. Firth); "Rempstone Village" (W. E. Dixon); "The Avon from Clifton Down" (H. C. Tyers); "The Farmhouse" (C. H. Deshormes); "Glandwr Mills" (H. J. May). The others are well up to first-class standard. The "curio" of the competition is a snap-shot by Mr. A. W. Allison (1st class), a Photograph of "Rocket Practice on Withernsea Beach." This is a remarkably good piece of instantaneous work on a half-plate. An excellent view of Portland Bill has been sent by Mr. Haines, Portland Bill, Dorset.

The Photographs placed in the Second and Third Class show considerable merit. We should



FIRST PRIZE.—"SALISBURY CATHEDRAL FROM THE RIVER."

Mr. Copeman has made in order to secure the best point of view to give breadth to his picture, and yet permit the venerable building to stand out upon the horizon in all its beauty.

Mr. Shirley has been almost equally successful with Haddon Hall; his subject is a very popular one, and he has handled the lighting with great judgment. This subject is made much more pictorial by the introduction of figures, but it is at all times difficult, and to place a figure that shall accord with the quaintness of "Dorothy's Steps" requires the judgment of an artist and the assistance of an accomplished model.

Mr. W. R. Brightman is, if we mistake not, the son of a well-known amateur Photographer in Bristol; if so, he is following closely in his father's footsteps. The picture, "A Stormy Sunset," has in the foreground a number of

like to be able to say a few words upon them, but cannot take up more space. If, however, any of the competitors care to have their work criticised, and they send an intimation to that effect, we will arrange that it shall be done by our Photographic Editor, through the medium of the correspondence columns.



THE PHOTOSCRIPT For Titing Negatives.

Full particulars and Specimen Photograph named with the Photoscript free on application.

H. LINDNER,

170, FLEET ST., LONDON, E.C.

HINTS ON HOBBIES.

PICTORIAL ADVERTISEMENTS—WHAT TO DO WITH THEM.

IN these days many very beautiful show cards are issued as advertisements. These may be utilised in various forms, but if objection is taken to the lettering and trade announcements, this can be obviated by stippling over the objectionable portions. For instance, if the subject be a head or figure in outline, the entire background may be "stippled." All that is required is a camel-hair brush, gum, water, and such colours as yellow ochre, Vandyke brown, and Prussian blue. It is possible with these very simple assistants to convert the show card into a picture that, if not good enough for a drawing room, will at least brighten up the walls of bedroom or staircase.

TO MAKE A PRETTY TRAY.

As *Hobbies* is a paper for both sexes we will suggest a simple means of making a useful tray, which can easily be done by members of either sex. Procure a piece of white cardboard, cut it in the form of a hexagon of such dimensions as may be desired. In the centre draw a circle, and at the points of the hexagon, a section of a circle. Paint these a dark colour with a hard enamel paint, and upon them stencil a suitable design in light colour. In the remainder of the space between the centre, cross-hatch with different colours. The centre may be left white, and either a stencil pattern added in colour or a suitable floral design. When finished mount the card on a piece of hard wood about a $\frac{1}{2}$ inch thick. To make more complete and give a better finish, procure a piece of sheet brass pierced with a pattern, and affix to the edges.

TO MAKE A MUSICAL TRIANGLE.

This instrument may be made out of good tool steel of the thickness generally used. This should be worked at as low a heat as possible, and heated equally all over to a cherry red. When this has been done the triangle should be dropped flat-ways into cold water, so that the entire triangle will be chilled and hardened simultaneously. When cold, rub with sandstone and gradually lower the temper of the steel till a light blue colour is obtained. The tone should then be correct.

HOW TO CLEAN A BICYCLE.

The President of the Lady Cyclists' Association gives in *Home Notes* the following instructions upon cleaning a bicycle. She says:—I brush all the mud and dust from the tyres with a moderately hard brush, revolving the wheel slowly so as to bring each bit in turn outside of the dress guard or mud guard. After brushing I wipe it with a clean soft duster—flannelette dusters are capital for the purpose. Care must be taken to remove the mud thrown up by the brake from the front wheel, and lodged in small crannies. The cranks must have special attention, as they are apt to tarnish or spot first.

The plated limbs and the remoter parts of the gear-case can be reached by means of a long handled plate brush. "Selvyt" is an excellent material for rubbing up the handle bars and steering column—a dash of rouge or plate powder may be applied at rare intervals; this will keep up the brightness. Cork handles are apt to grow dirty, but may be washed with a yellow soap. When the machine is not in use, it is well to rub or smear bright parts with vaseline, which can be readily wiped off when required with a clean cloth.

GRINDING SKATES.

This can be done without removing the skate iron from the "clog" by rigging up an emery wheel of 12 or 14 inches diameter, and $\frac{1}{2}$ inch thick on a lathe. The wheel must be set dead true, and a rest for the arms must be rigged up whilst holding the skate iron to the wheel. Over the emery wheel there must be a drip can to water the wheel, and keep the iron cool. Adopting this plan it will be quite unnecessary to remove the iron from the clog.

TINTING ELECTRIC LIGHT SHADES.

Dissolve bleaching powder in spirits of wine, and place the bottle in a warm place. When the shellac is dissolved, add a quantity of aniline dye until the desired tint is obtained. Before use filter the whole through fine muslin. See that the glasses or shades are perfectly clean, and warm them before applying the colour with a soft varnish brush.

ETCHING ON GLASS.

From an American Journal we learn that no better recipe for fluid can be found than the following:—36 grammes of fluoride of sodium, and seven grammes of sulphate of potash are dissolved in 500 cc. of water—this forms one solution; 14 g. of chloride of zinc are dissolved in 500 cc. of muriatic acid—this forms a second solution. A mixture of equal parts of the two solutions is made and applied with a brush. In thirty minutes the parts touched are plainly bitten in. The letters refer to metric quantities, "g." grammes and cc. cubic centimetres.

COLOURED INKS.

The Best Red Ink.—A very beautiful rich red ink can be prepared thus: Dissolve 20 grains of the best pure carmine in 3 fl.oz. *liquor ammonia fortissimo*, from the chemist. When fully liquefied, add to the pungent ink 20 grains of fine and finely powdered gum arabic. The colour of the resulting writing fluid is superb.

Blue Ink.—The important and decorative blue tinctures used as ink commonly consist of a mere solution of the "soluble" Prussian blue in distilled water, or of the common variety of Prussian blue, mixed with one-sixth its weight of oxalic acid, triturated to a smooth paste with a small quantity of soft water, and reduced to a proper consistency and colour by further additions of the aqueous diluent. To make a pint of our blue writing fluid, one ounce of the powdered pigment will be required. Voluminous writers may readily deduce the formulæ for larger quantities of ink.—*Science Siftings.*

STAMPS

Week by Week.

A Philatelic Causerie by PERCY C. BISHOP,

Joint Editor of the "STAMP COLLECTORS' FORTNIGHTLY;" Ex-Editor of "THE PHILATELIC JOURNAL" and "PHILATELIC REVIEW OF REVIEWS;" General Secretary of the LONDON PHILATELIC CLUB.

THE strange rumour reaches me that the English "I. R. Official" stamps are to be done away with. Coming on the heels of the Cardiff prosecution the idea is a feasible one, for there could be no better way of preventing the pilfering that has been going on among the Government's employees than to abolish the stamps altogether. Not only would the "I.R.'s" go, but probably the "Government Parcels" as well, for there is as little need for the one as the other.

Philatelists were startled some time ago by the news of a big "find" of the extremely scarce St. Louis (U.S.A.) stamps. A detailed account of the discovery is now to hand. It appears that the doorkeepers of the Court House at Louisville, Kentucky, were ordered to destroy a large accumulation of old papers lying in the basement of the building, documents that had lain untouched for close upon fifty years. While shovelling old letters into a furnace, a curious looking stamp was noticed upon one of them—a stamp bearing two large bears and the words "St. Louis—5 cents." With a vague idea that some people collected such things the men preserved the stamp, and also many others that came to light among the rubbish. All told, they found 137 of these excessively rare stamps. Utterly ignorant as they were of their value, one is not surprised to hear that they sold the first half dozen or so for a mere song. But the palpable eagerness of the persons they sold them to gave the doorkeepers an idea that these stamps were very rare ones indeed. To cut a long story short they sold the stamps in small batches, asking for a bigger price at each successive sale, until at last they reached the stupendous price of 500 dollars per stamp.

It might be thought that the discovery of 137 specimens of such exceedingly rare stamps would have depreciated the price, but the reverse has been the case. The "find" has been a blessing to more than the two men who actually unearthed the stamps, for it has enabled Mr. C. H. McKeel, a prominent American Philatelist, to properly study and classify all the varieties of type, a work which

had hitherto been impossible owing to the dearth of specimens. The 137 stamps found at Kentucky comprised 75 of the 5 cents., 46 of the 10 cents., and 16 of the 20 cents.; but when it is added that there are 4 type varieties of the 20 cents., 9 of the 10 cents., and 7 of the 5 cents., it will be at once seen that no fall of price need be anticipated.

HOW TO MOUNT ENVELOPES.

Numerous questions have been put to me concerning envelopes and postcards. Do I think them worth collecting? Should they be collected entire or the stamps cut out? And if collected entire how should they be kept? and so on, *ad infinitum*.

By way of killing all these inquisitive birds with one stone I propose to show the best ways of keeping entire postcards and envelopes. First let me say that they must be collected *entire* or not at all. It is of no use to cut out the stamp and stick in one's album; one might as well collect crests or trade-marks. A blank album with stout leaves of thick card is all that is required. Having the album, how shall the cards and envelopes be neatly mounted without injury to the specimens? Some collectors keep their "entires" in position by bands of baby ribbon, but this plan, though pretty, is too complicated and troublesome. There are several better ways. One good one is to make "pockets" out of



FIG. 1.

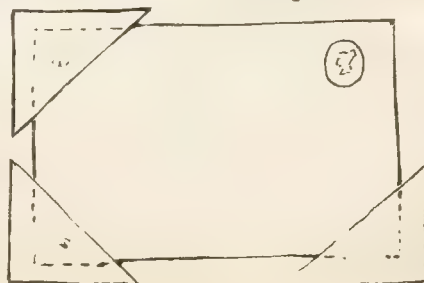


FIG. 2.

small triangles of paper, gummed on two sides, as in Fig. 1. If these are affixed to the desired page in the album, at such distances as to admit of the insertion of the card in the manner shown in Fig. 2, the result will be found eminently satisfactory.

An alternative plan, and perhaps a better one, is to use gummed straps of paper (see Fig. 3) which can easily be made from the

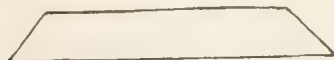


Fig. 3.

lower corners of any ordinary commercial envelopes. First cut off the corner of the envelope one inch, measuring from the corner along each side; then make another cut parallel with the first, and about three-eighths of an inch distant from it, and you have your



Fig. 4.

strap. Two of them will be sufficient to keep any card or envelope in place.

—:O:—

NEW ISSUES OF STAMPS.

Items for this department will be gratefully received from any Philatelic readers who happen to receive early information of new issues, or of impending changes in the postal arrangements of any country.

CAPE OF GOOD HOPE.—A new letter card has been issued; value 1d., colours carmine on grey. The stamp, which shows an effigy of the Queen, is placed at the top centre of the card.



MAURITIUS.—I illustrate the new issue already described, of which specimens have been kindly sent me by two *Hobbies* readers. The design is scarcely what one would expect from a British colony, either on the ground of appropriateness or artistic merit.

QUEENSLAND.—On the better-late-than-never principle, I present the annexed illustration of the Queensland 5d. stamp, which was chronicled and described some weeks ago.



URUGUAY.—I reproduce from the *Philatelic Journal of Great Britain* the following list of values of the new issue received up to date. It will be seen that each stamp in the series has its distinctive design:—

- 2c. blue, Building.
- 7c. green, Bull's head.
- 10c. brown, Female (agriculture).
- 20c. black and green, Ship.
- 25 " red-brown, Minerva.

COLOMBIA.—The bulk of my readers are aware that the various Provinces of the Colombian Republic are independent countries so far as postal administration is concerned. All of them, that is to say, have their own postage stamps. It is now reported that Antioquia will shortly have a complete new set, while a new 5 centavos stamp is to hand from the province of Santander. This latter is an unlovely lithograph on white wove paper, perforated 13. In the centre are the arms of Colombia; at the top "Correos" (postage); at the bottom "República de Colombia," and at the sides "Dep. of Santander." The colour is brown.

Morocco contributes a series of stamps which collectors are advised to admire from a safe distance. The design is a mixture of geometry and hieroglyphics, with "Servicio de Correos Marruecos" at top, and value at bottom. They are on white wove paper, perforated, and the values and colours are: 5c. mauve, 10c. scarlet, 20c. yellow, 25c. bright blue, 50c. brown, 1 peseta red brown, 2 pesetas slate, 5 pesetas bright green. Imagine a 5 pesetas stamp in Morocco where half the population cannot write and the other half are too lazy. Until I hear something more as to the origin of these stamps (which may be utterly bogus for all I can discover to the contrary) I must caution all collectors to give them a wide berth.

SALVADOR presents us with a series of gaudy official stamps, extending from 1 to 100 centavos in value. These also should be boycotted by collectors, unless they can get undoubtedly genuine used specimens.

(To be continued.)

TO STAMP COLLECTORS

NEW

Illustrated Price List

GRATIS ON APPLICATION.

Monthly List
of Philatelic Novelties
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FISHER, TITLEY & Co., Stamp Importers, BATH.



No. 18. FRETWORK BOOKSHELVES.

THIS is not a novel Pattern, but it is one which should be found generally useful by every Fretworker. The Design, as shewn on the Supplement Sheet, may be used in three ways:—

A Small Bookshelf, as indicated in the miniature.

A Wall Etagère.

A Corner Bracket.



The cutting throughout is so simple that no hints on this part of the work are required. A few suggestions may, however, be thrown out with regard to more general matters. The wood used should not be less than one-quarter inch in thickness, and the worker need not be afraid of three-eighths inch appearing too heavy. As both ends are alike much time and trouble will be saved by cutting the two at once. The Shelves, it will be seen, are made to slide on by half-cut through joints, and as the strength of the article greatly depends on the way in which this is done, care should be taken to have the half-slots cut the exact thickness of the wood which is being used, so that everything may fit tightly. If this is done well neither glue nor screws need be used, as the article will hold together of itself, and can readily be taken to pieces and folded up if desired.

A useful Wall Etagère, or China Shelf, can be made by cutting out *three* sides (one to act as a

centre support), and making the Shelves twice the length shewn. By many this will be found preferable to the small-sized article, as it will be more serviceable. Sound wood must be chosen for the Shelves, and the centre gable will be fixed in the same manner as the side ones. If the article is made about four feet in length, *two* division gables will be necessary.

In making a Corner Bracket, the first consideration is the corner joint. If one side is merely allowed to butt against the other in the usual way, the back edge of one must naturally be made one-quarter inch wider. A better plan is to make both pieces slightly wider, and dovetail them together. The simplest form of dovetailing may be employed, as the Bracket is not expected to bear much weight. Two corner shelves must be made, but as these are simply quadrants they can be drawn direct on the wood by means of a set square and a pair of compasses. A nulled edge (similar to that shewn on the Supplement) should be given, as it helps the effect.

[Additional copies of this Design may be had, price 3d. each, on application to the Publisher of *Hobbies*, Bouverie House, Salisbury Square, London, E.C. The presentation Supplements will be given during the current week of publication only, and will not be supplied with back numbers of *Hobbies*.]

No. 19. DADO BANDS.



The above sketches are miniatures of the full-sized Patterns for Stencil Dado Bands (to be cut with penknife or Fretsaw), which will be given away with each copy of next week's issue of *Hobbies*.

BENT IRON WORK.

Price List, Design Sheet, and particulars of our Special Tool, "THE IONICAL," post free, 1d.

—& BAMBOO WORK, —&

Every requisite at low prices. Sole Agents for the new Patent Screw Plug Joint, cheap and simple. Price List, with full particulars, on receipt of 1d. stamp.

THE AMATEUR'S MARKET, LEEDS.
8, BRITANNIA BUILDINGS,

PRIZE Competitions

Junior Fretwork Competition.

We have received a very large number of "Hobbies" Tablets for the Fretwork Competition for readers under sixteen years of age, and up to the moment of going to press it has been impossible for the judges to make their final award. All the examples sent in will be carefully considered, and the result published in next week's issue of *Hobbies*.

Photography.

The result of the January Photographic Competition, with a reproduction of the First Prize Photograph, and a few general notes on the prints submitted, will be found on page 420.

Every month we give a Prize of TEN SHILLINGS for the best PHOTOGRAPH and FIVE SHILLINGS for the second best. Subject for this month—Groups, Portraits, or Animals. Photographs cannot be returned, and we reserve the right to reproduce any of them in *Hobbies* if thought desirable. Photographs for this Competition must be sent to our office not later than February 29th, marked "Photograph."

Lantern Slides.

A First Prize of TEN SHILLINGS, and a Second Prize of FIVE SHILLINGS will be given for the best Sets of THREE PHOTOGRAPHIC LANTERN SLIDES. Subject for February:—One Landscape, one Seascape, and one Architectural Slide.

Slides will be returned if fully stamped and addressed labels are sent.

Mark "Slides," and send to our Office not later than February 29th.

Bent Iron Work.

For the best BENT IRON WORK GRILLS, made from Presentation Design No. 14, we offer one Prize of a GUINEA, and one Prize of HALF-A-GUINEA.

All matters relating to the actual work, *i.e.*, width of metal, method of fixing, etc., are left entirely to Competitors, and the awards will be given to those examples which shew the best general work.

Every Competitor should write his or her name clearly on a label which must be attached to the Grill itself.

All Grills sent in for Competition will be returned if desired, and for this purpose fully stamped and addressed labels must be enclosed. In no case can articles be returned unless sufficient stamps are sent.

Articles should be marked "Grill," and must be received at our Office not later than March 31st.

Fretwork.

For the best FRETWORK MODEL of a VICTORIA, made from the Design presented with *Hobbies* No. 10, we offer Two Prizes:—

First Prize—An "IMPERIAL" TREADLE FRET-SAW, with Superior Tilting Table for Inlay Work, Vertical Drilling Attachment, and all Modern Improvements.

Second Prize—A Finely Finished Treadle Fret-saw, with Nickel-plated Tilting Table, Emery Wheel, etc.

The choice of wood, method of cutting, and all matters relating to the actual work are left entirely to the Competitor. We would strongly urge, however, that all Articles should be left plain, and that no polish, varnish, stain, or paint of any kind be used.

Every Competitor should write his or her name clearly on a label which must be attached to the Victoria itself.

Articles sent in for Competition will be returned, and in every case it must be stated clearly whether they are to be sent back by post or rail. If by post, sufficient stamps must be enclosed, and these should be affixed to the addressed label. If returnable by rail, the name of the nearest Railway Station must be clearly given.

As the work of unpacking and repacking these Fretwork Articles entails a great amount of labour, we must ask Competitors to adhere to our rules and suggestions as closely as possible.

All Articles sent in for Competition should be marked "Victoria," and must be received at our office not later than March 31st.

Wood Carving.

For the best CARVED BLOTTER BOOK COVERS, made from Presentation Design No. 15, we offer Two Prizes:—

First Prize—ONE GUINEA.

Second Prize—SET OF TWELVE SUPERIOR CARVING TOOLS.

The choice of wood and method of carving and finishing are left to Competitors.

Every Competitor must write his or her name clearly on a label which should be pasted to the back of the article.

Articles sent in for Competition will be returned if desired, and for this purpose fully stamped and addressed labels must be enclosed. Blotters cannot be returned unless sufficient stamps are sent.

Articles should be marked "Blotter," and must be received at our office not later than April 30th.

Notice to Competitors.

All Articles, Sketches, etc., for Competition should be addressed to the Editor of *Hobbies*, Bouverie House, Salisbury Square, London, E.C. The name and full address of Competitor must in every case be sent.

NOTE:—No correspondence can be entered into with Competitors, and all awards made will be final.

NOTICE TO CONTRIBUTORS.

The Editor of "Hobbies" is always ready to receive Suggestions for Articles for insertion in the paper. Any manuscript sent for his consideration must however be accompanied by a fully addressed and stamped envelope. Unsuitable contributions will be returned without avoidable delay, but it must be distinctly understood that the Editor will not hold himself responsible for the loss of any manuscript.



CHAP. XVII.—COLOURED STAINS.



Rosewood, Mahogany, Walnut, and other fancy Fretwoods may now be purchased in excellent condition at about the same cost as varieties such as Chestnut, Sycamore and Ash, it is seldom that the amateur requires to imitate these less

common woods by means

of Stains. It often happens, however, that one is desirous of darkening the tone of a certain coloured wood, and for this purpose the Stains manufactured by Stevens, or the well-known Dyes of Judson,—both of which may be had from a colourman, or even from a grocer—will come in useful.

Stevens' Stains are purchased in stone bottles. They should never be used in their full strength, but should be diluted with a little water. If one strong coat were applied a coarse and uneven effect might be the result, but when two or three thin coats are given, a pleasant and natural surface is obtained. It must be remembered that the Stain is not a *Dye*, and if the article is afterwards to be polished a fixative must first be used. To do this, take some boiled Linseed Oil, and with a soft rag rub it carefully over the stained wood. The slightest touch of Oil will be sufficient. When absorbed it may receive a rub, either with a dry rag or brush, after which it is ready for the Polish or Varnish.

Judson's Dyes are not so generally popular for wood staining, but when fancy colours are wanted they will be found useful. As many of the tints are rather brilliant, it is advisable to tone them by a little judicious mixing, and, as with Stevens' Stains, they should be diluted with water, and two or three thin coats given instead of one strong one.

It is hardly necessary to say that, before any Dye or Stain is applied, the colour should be tried on some waste piece of wood; and if the article is of any special size or importance, a *finished* experiment should be made before the real work is begun. Staining, like everything else, requires practice, and if this advice is followed the final result will be a greater success.

Stains are applied with a brush, and, to prevent any swelling of the wood, as little colour as possible should be taken up with each dip. After the

coat has dried a clean brush should be taken and the wood well rubbed with it. This has the effect of marking the grain strongly, as it rubs the surplus colour off the harder streaks in the wood, whereas the softer and more porous parts have already absorbed the Stain.

Fretworkers who have a little knowledge of colouring will be guided by experience in the mixing up of tints. We strongly deprecate the use of fancy colours, and for that reason will refrain from giving a series of recipes. In Fretwork there are certainly exceptional cases where the use of Stain is advisable, perhaps necessary, but it is seldom expedient to introduce all the vivid rainbow colours; thus the only *unnatural* tint which will here be referred to is *Green*.

No suitable Green Stain can be purchased; all are too bright. Stevens' Green and Judson's Olive-green must be toned with a little brown. If the amateur can use water-colours, he will find that the most pleasant tints can be obtained by them. Water-colour tubes, or powdered colours may be employed, water being the sole medium. Antwerp Blue and Indian Yellow, or Prussian Blue and Yellow Lake, each with a touch of warm Brown and Raw Sienna, will give an effective green. A touch of Gamboge would brighten it, but as green-stained wood is usually of an Olive tint, it is not advisable to aim at anything vivid. When the Stain is being applied it should occasionally be stirred, as the different colours have a tendency to separate.

We are well aware that experienced wood-polishers have special methods and recipes by which they secure those beautiful and natural Greys and Greens so often seen in good furniture. These methods are usually trade secrets, but were we to describe them fully, it is questionable whether the amateur would be much benefited. Brilliant results can only be obtained after careful experiment and long practice, and with Staining and Polishing so much "faking" is required, so many "dodges" have to be tried, and "cooking" must so often be brought into play, that any detailed suggestions here would probably leave the reader where he was at the outset. If he should have the privilege of a personal acquaintance with some furniture polisher, and could have an opportunity of watching the man at his work, then he might pick up some valuable hints; but where every workman has his own method, and where the suggestions of one would

be scouted by another, it would be idle on our part to try and explain the trade recipes.

Walnut, Mahogany, and other named Stains may be used on White wood for the purpose of imitation, or they may be applied to Walnut, Mahogany, etc., to darken them. In the latter case the Stain must be comparatively weak, and fewer coats should be given.

The amateur can make a simple Stain for darkening Mahogany by purchasing a pennyworth of Chromate of Potash, and boiling in about one quart of water until it is dissolved. When cool it may be applied with a soft rag, care being taken to rub evenly as the colour is very absorbent.

A cheap Walnut Stain can be made by mixing one pennyworth of Nut Galls (Powder) with a quarter-pound of American Potash, adding a pennyworth of powdered Vandyke Brown, and pouring on about a gallon of boiling water, or so much as may be found necessary.

Vandyke Brown and Pearlash boiled together make another fairly good Walnut Stain, and one which produces a rich, mellow effect if applied to Mahogany wood. It can also be used on Light Oak, or on any wood with a somewhat similar grain, and a tolerably good imitation of Brown Oak will be secured.

Oak, however, has always a better appearance if fumigated with Ammonia. This is a difficult process for the amateur, as an air-tight case is required, so if the article is of any great size, it should be given out to a furniture firm to have the staining work done. If reasonably small, the following plan may be tried:—Procure a tin biscuit box, and ascertain that, so far as the sides and bottom are concerned, it is air-tight. Place a saucer of Ammonia in this, and arrange the Fretwork article above so that the fumes will get well round it. There will be no difficulty in this; the article may be propped up with small sticks, or suspended by string. The chief consideration is to see that no part of the wood is covered up, but that it will all be exposed to the Ammonia. The lid should then be placed on the box, and all the joints sealed up by pasting stiff brown paper over them. If the amateur puts his nose close to the tin he will very soon be conscious of any serious leakage, which can be easily stopped by a further application of paper. A hole may be cut in the lid, and a piece of glass fitted in,—care being taken that all the edges are closed up; by this means the process may be watched, and the article removed when the Oak is fumigated to the desired shade. Wood so stained should not be French polished or varnished, but should be waxed.

The process of Waxing is simple, and may here be described. Take some Beeswax, cut it into fine shreds, and place in a small pot or jar. Pour in a little Turpentine, and let the mixture stand for half-a-day, giving it an occasional stir. The Wax must be thoroughly melted, and then some more Turpentine added till the preparation has the consistency of thick cream. It can then be applied with a rag, and afterwards brushed up with a stiff brush. Waxing is very suitable for Oak, but on Mahogany or Walnut it will not produce such a bright gloss as French Polish. The process of brushing, too, is a somewhat dangerous one, as a delicate Fretwork article is very liable to get damaged.

On the whole we do not feel inclined to encourage the use of Stains for Fretwork at all, and we strongly advise readers to use them sparingly. Unless considerable skill is possessed, the work has invariably a *painted* look about it, and although this may not be objectionable on large solid work, it makes a small table ornament appear clumsy and dirty. The Fretworker must simply be guided by his own taste and judgment, as almost every piece of work has to be treated in its own special way.

(To be continued).

* * As we know that many Fretwork amateurs are in the habit of experimenting with Stains and Dyes, we should be glad to get particulars of any successful results for the benefit of other readers.

Special Offer of

FRENCH FRET DESIGNS.

For 1/-, Post Free, we will send a parcel of 12 **Splendid French Designs**, beautifully printed, containing **Pipe Racks, Photo Frames, Cigar Stands, Watch Stands, Easels, Brackets, Flower Stands, &c., &c.** We guarantee 6 of the above to be **fully worth the money.**

Grand French Catalogue of Miniature Designs. **Splendid Collection** of several hundreds of the best Designs ever published, **Post Free, 1/-**
STAR SAWS, 1/6; LIGHTNING SAWS, 1/3; SWISS SAWS, 10d.
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OUR NEW CATALOGUE, containing 1,000 illustrations of Fretwork, Carving, Picture Framing, Best Iron and Bamboo Work, Designs and Materials, 6d., post free.

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With this New Edition of 20,000 copies, we shall present a finely finished pattern of the Crescent Wall Bracket.

HARGER BROS., Settle, Yorks.



*. All communications to be answered in these columns should be marked "Correspondence," and must be addressed to the Editor of *Hobbies*, Bouverie House, Salisbury Square, London, E.C. In no case can we reply to enquiries by post.

ELECTRICITY.

- A. G. WRIGHT.—The Induction Coil was dealt with in Nos. 3, 4, 5, 6, 7, 8, 9, and 11.
 R. B. COOPER.—Electro-motor making is too lengthy a subject to deal with in this column, but we hope to publish an article on the subject shortly.
 W. H. BURROWS.—The dry cells you describe would probably light the lamps for short periods at long intervals, say ten minutes in twenty-four hours. Eight cells would be required.
 W. S.—In making the plates for the accumulator described in No. 1, the lead foil should be placed on either of the halves of the lead plates, so that when the plate or grid is closed the foil will be between the halves, just like ham in a sandwich.
 W. SYMONDS.—We could not even guess at the candle power of your lamp. It might be anything between five and twenty-five c.p. You cannot render a wire incandescent unless it is enclosed in a chamber at a high vacuum. You could not do this in a watch chain.

FRETWORK, CARVING, &c.

- GREEN.—Read this week's *Fretworking* Chapter.
 F. WHITTAKER.—For what purpose do you require the wood? Try *Hints on Wood Carving*, by E. Rowe, 1/6 (Batsford, High Holborn, W.C.)
 W. D. SHRIGLEY.—In *Hobbies* No. 2 we explained to "C.B." how to straighten warped wood. (See our reply to you under *Miscellaneous*.)
 J. C. LIVINGSTONE.—The washers for the Victoria will be best if cut out of $\frac{3}{8}$ inch wood; they should not be glued to the wheels. These points, however, are trifling, and need not worry you.
 RUTH.—The gloss on the wood which you speak of is not a disadvantage. The paste does not cause it; many woods take on such a gloss when rubbed with fine sandpaper, always provided that the rubbing is *with* the grain.
 B. H. A. CARLTON.—(1) We receive so many suggestions for Designs of all descriptions, that it is impossible to promise definitely to oblige every correspondent. However, a pipe rack is a good subject, and we shall try to publish one before next Christmas. (2) The writing-desk and whatnot we have made a note of. (3) *Hobbies* volumes will be half-yearly.

PHOTOGRAPHY AND LANTERNS.

- FEED W. WHITE.—We will consider the question of a *Hobbies* "Photographic Correspondence Club," and also your offer.
 B. B.—You can certainly use the 4 wick lamp and the 4 inch condenser in an enlarging lantern, but the size of the condenser limits your enlarging from a negative measuring more than $8\frac{1}{4}$ to $8\frac{3}{4}$ inches square.
 DAINE.—Such an apparatus as you describe for film developing has been put on the market, and can be obtained of Photographic dealers in London, Glasgow, Edinburgh, Liverpool, Manchester, in fact in almost any large town.

PIGEONS.

- THOS. J. PRATT.—Captain Terry's Patent Ventilator may be obtained from Comyns, 9, Arundel Street, Strand, W.C., price about 3/6.
 T. H. J.—If a good supply of old mortar be placed in or near the loft the trouble will cease. Feed on maple peas, dari tares, and a little English wheat for the next few months.

METAL WORK.

- L. C. L. N.—To cut out heads, emblems, etc., from coins your best plan is to use the Fretsaw; Acid leaves a rough edge.
 W. ATLEY.—You can easily measure the length of Bent Iron Work curves by means of string, or with mathematical dividers.

STAMPS.

- A. WINDROW.—The (Jubilee, 1890) blue envelope, with correspondence card, both unused, are worth 2/6.
 JACK MORTON.—Brazil (1889), 4d.; Hamburg, 7 schilling (1864), 17/6; Brit. Guiana, XLVIII. (1863), 4/6; one cent. (1860), 5s.; Franco-Swiss, 5 Rappen (1854-62), 1s.; Argentina Republic, 8 centavos (1878), 3d. This last stamp is probably worth more, being surcharged.
 T. W. F., OMEGA, H. M. C., AND OTHERS have been asking for some way of exchanging their duplicate stamps. The only way to properly answer this question is to give a list of the principal exchange clubs, and this we shall endeavour to do next week.
 H. J. C. (Barnesley).—An album specially designed for English collectors has been published at prices ranging from 2s. 6d. upwards by Messrs. Hilkes and Co. Should you wish to include Colonials, the album to get is that known as the "British Empire," published by Stanley Gibbons, Limited.
 HEIRLOOM (Bristol).—We congratulate you on possessing an English postage stamp of the value of 2s. 6d., dated 1857. But take another look, "Heirloom," for there is a mistake somewhere. The first 2/6 English stamp was issued in 1882. If you mean 1857 the stamp is worth from 6d. to 1/-, according to condition.
 F. V. D. (Hull).—Your book of stamps (returned by post) is of very little value. In fact, apart from a few fair specimens of English stamps, the book contains nothing desirable. As for your projected purchase of old stamps done up in bundles, we should strongly advise you not to buy a pig in a poke. If the stamps are mostly English, 6d. a hundred should be an ample price.
 O. H. C. (Reading).—Your first is a Sandwich Islands, or Hawaii stamp, worth about twopence. The "Government of India" stamps are fiscals; let them alone. "Sverige" stamps come from Sweden and are mostly common. Cape Verde is not a difficult country taken, nor is Porto Rico. It is impossible to tell you what the stamps of any particular country are worth, as necessarily there are rare and common stamps of nearly all countries.

MISCELLANEOUS.

- POSTMAN.—The seven back numbers of *Hobbies*, with design supplements, will cost you 2/6.
 FRANK BAKER.—The question of giving certificates will have consideration.
 T. W. READER.—If you succeed in doing what you wish, you will have discovered perpetual motion! We can hardly help you.
 W. D. SHRIGLEY.—You could get the two pieces you require set to music for the concertina at Turner's, 39, Oxford Street, W.
 J. W. PARTRIDGE.—The value of your copy of "Fox's Book of Martyrs" will depend greatly on condition. Write Walford Bros., 320, Strand, W.C.; they are purchasers of such books.

FOR Sale, and Exchange.

*. The charges for advertisements (prepaid) in this page will be sixpence for every twelve words or less, name and address inclusive, and one halfpenny for every additional word. Single letters, initials and figures are each counted as a word; but undivided numbers (as 152), and prices (as 10s. 6d.) count as only one word each. In every case the name and address of the advertiser must be given for publication, and we cannot at present undertake to supply a private name or number and receive replies to advertisements at our office. All advertisements must be accompanied by remittances, otherwise they cannot be inserted. When ever possible, payment should be made in Postal Orders, and not stamps. Letters should be marked "Advt.," and must be addressed to the Publisher, *Hobbies*, Bouverie House, Salisbury Square, London, E.C.

NOTE.—Trade Advertisements can only be inserted in this page at the rate of one shilling per line.

Acme Electric Bell Set, comprising 2½ in. Electric Bell, Quart Leclanche Battery, Push, 50 feet Wire, Staples, Instructions, 4/6; better value impossible.—Electric, Lord Street, Openshaw, Manchester. E. 4.

Approval Sheets for beginners and medium collectors. Good variety.—Phoenix Stamp Co., 31, Radnor Street, Peckham.

Auto-Harp, easily learned, only 10/6. Fret Machine, 14/. Accordion, 3 stops, 8/6. Approval. Exchange anything useful.—Sanderson, 410, High Street, Gateshead.

"Electricity." One Penny weekly; practical, chatty, and interesting. Should be read by everyone interested in the science. Order it from your newsagent. D. 4.

Electrical Hobbies.—Write for New Enlarged List; will just suit you; prices low; best quality.—Electric, Lord Street, Openshaw, Manchester. E. 4.

Electric Bell Battery, 50 yards wire push, etc., complete. Easily fitted. Instructions with each set, post free, 6/6.—H. Fowler, 202, Victoria Park Road, Hackney. B. 1.

Films for tracing Lantern Slides, 4½d. per doz. Photographer, 11, Bothwell Street, Glasgow. B. 1.

Fishing Rod, ash, 12 feet, four joints, winch fittings, brass ringed, with reel, lines, hooks, etc. Cost 12/6, only twice used, price 7/.—H. Pile, Benenden, Kent.

Fret Machine, arms clear 24 inch, and Lathe, price 20/.—J. Cousin, Red Houses, Witton Gilbert, Durham.

Fretworkers' Central Depot.—All Harger's and Skinner's goods supplied. This week only all Harger's Patterns reduced 25 per cent. to 50 per cent.—Screws, 4½d. gross, ½ to ½ inch only.—Lund, Cycle Agent, Bradford. B. 1.

Fretwoods, ½ inch American Canary, 3½d. per foot; Teak, Mahogany, 4½d.—T. Carter, Lichfield. H. 7.

Government Parcel and I.R. Official Stamps cheap. Price List ½d.—W. Partridge, Alvechurch.

Hand Camera for Sale, 10/6, almost new, ½ plate.—Apply, B. Furbly, 14, The Parade, High Road, Upper Clapton, N.E.

High Class Tools.—For New Illustrated Price List, send 3d. to Osborn Brothers, Tool Merchants, 38, Frattton Street, Portsmouth. M. 13.

How to make an Electric Night Light that will work well for years without attention, post free, 6 stamps; also how to attach an electric alarm to clock, 6 stamps.—James, 11, Stanbury Road, Peckham, S.E. C. 3.

New Book of Instructions in gilding, graining, mixing paint, French polishing, picture-frame making, mount cutting, etc., 1,000 valuable recipes, free, 1/2.—McQuhae, Cockermouth, and all Booksellers. L. 7.

Photographs, scrap views, various, 6 by 8, extra value, 2½d. each.—Photographer, 11, Bothwell Street, Glasgow. B. 1.

Roger Fretsaw. Nearly new, Tilting Table, Dust Blower, Drilling Attachment. Will sell for 9/6.—Pocock, Munster Rd., Fulham.

Stamps. Old English (obsolete). Black 1d., year 1840; blue, 2d. unperforated; ditto, perforated; also Mulready envelope. What offers per doz. for former?—Norman Tivy, Galway.

Stamps.—Zuid Afrikaansche Republiek, very scarce obsolete provisional; Bulgaria, surcharged; Sierra Leone, Pattialla, Persia, Morocco, Mauritius, Labuan, Iceland, Anjouan, Grenada, Egyptian Service; 60 excellent genuine varieties, 1/1.—Smith, Arthur Road, Kingston, Surrey. C. 1.

Violin. Splendid tone and finish, in case with bow, complete. Sacrifice 17/6, a bargain.—Beeston, Lydbrook, Glos.

80 Birds' Eggs, 30 varieties. Exchange collection Foreign Stamps.—E. Brown, Kelvedon.

80 Different Stamps from 40 different countries. Free, 7d.—Dew, Shirley Gardens, Hanwell, W.

BENT IRON WORK—We have received from Messrs. Chapman & Hall, Limited, a small handbook on *Bent Iron Work*, by Aganda Sanders. The manual deals chiefly with the more elementary stages of this hobby, but the hints and suggestions, though brief, will be found generally useful. The special feature of the book lies in the numerous illustrations. These are roughly drawn, but are sufficiently suggestive to enable the amateur to make Bent Iron Work articles from them, the plan of noting the extended size of each curve and scroll in some of the diagrams being particularly helpful. The handbook is published at 1/6.

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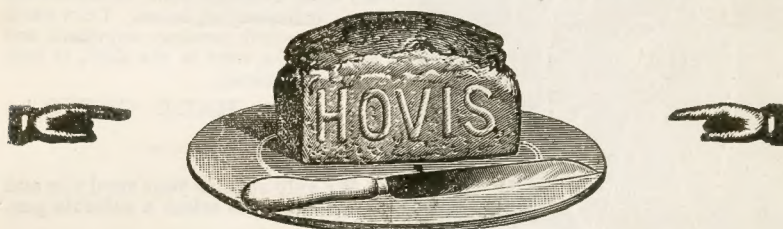
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6d. & 1/- SAMPLE OF BREAD & BISCUITS ON RECEIPT OF STAMPS.

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The Public are cautioned against accepting from Bakers spurious imitations of "HOVIS," which, having met with such unprecedented success, is being copied in many instances as closely as can be done without risk.

If any difficulty be experienced in obtaining "HOVIS," or if what is supplied as "HOVIS" is not satisfactory, please write, sending sample (the cost of which will be defrayed) to

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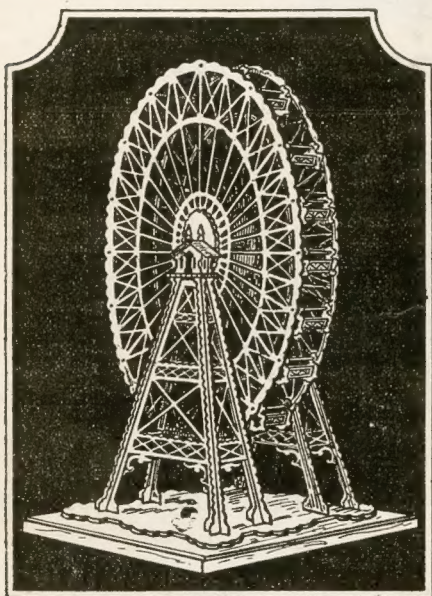
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 THE
GREAT WHEEL.

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